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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

LANDAU, MATTHEW C

ART UNIT

PAPER NUMBER

2815

DATE MAILED: 11/13/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/723,329

Applicant(s)

JENDICK, MANFRED

Examiner

Matthew Landau

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 22-48 is/are pending in the application.
- 4a) Of the above claim(s) 45 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 22-44 and 46-48 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 November 0200 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of Group II in Paper No. 14 is acknowledged. The traversal is on the ground(s) that all the limitations in the subcombination are included in the combination of Group I. This is not found persuasive because Applicant has not addressed the limitation of the beam expansion means. Furthermore, if claim 22 as it presently stands is allowable, claim 45 will be rejoined and allowed with claim 22, since claim 45 contains all the limitations of claim 22.

The requirement is still deemed proper and is therefore made FINAL.

Claim 45 is withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 14.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 25, 27, 28, 29, 30, 36, 39 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "said beam deflection means". There is insufficient antecedent basis for this limitation in the claim.

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Claim 25 recites the limitation "the near IR wavelength range" in line 2 of the claim.

There is insufficient antecedent basis for this limitation in the claim.

Regarding claim 27, the word "means" is preceded by the word "memory" in line 2, and the word "processor" in line 3, in an attempt to use a "means" clause to recite a claim element as a means for performing a specified function. However, since no function is specified by the word(s) preceding "means," it is impossible to determine the equivalents of the element, as required by 35 U.S.C. 112, sixth paragraph. See *Ex parte Klumb*, 159 USPQ 694 (Bd. App. 1967).

Regarding claim 28, the word "means" is preceded by the word(s) "processor" in an attempt to use a "means" clause to recite a claim element as a means for performing a specified function. However, since no function is specified by the word(s) preceding "means," it is impossible to determine the equivalents of the element, as required by 35 U.S.C. 112, sixth paragraph. See *Ex parte Klumb*, 159 USPQ 694 (Bd. App. 1967).

Claim 29 recites the limitation "the time period" in line 2 of the claim. There is insufficient antecedent basis for this limitation in the claim.

Claim 30 recites the limitation "the positions" in line 2 of the claim. There is insufficient antecedent basis for this limitation in the claim.

In regards to claim 36, the term "suitable" renders the claim indefinite. The metes and bounds of the claim cannot be determined by the use of this term.

In regards to claims 39 and 40, the term "about" renders the claims indefinite. The metes and bounds of the claims cannot be determined by the use of this term.

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In regards to claim 41, it is unclear what Applicant intends to claim with the limitation “physically unconnected”, since the laser unit must be connected by at least some type of wiring in order to coordinate operation of the laser unit and the processing apparatus.

In regards to claim 42, the limitation “wherein the laser unit is disconnectible” renders the claim indefinite. It cannot be determined from what element the laser is being disconnected.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 22-34, 39, 40, 42-44, and 46-48 are rejected under 35 U.S.C. 102(b) as being anticipated by Woelki et al. (US Pat. 5,329,090, hereinafter Woelki).

In regards to claim 22, Figure 3 of Woelki discloses a laser unit comprising: a beam generating means 15 for generating a beam 23 of laser radiation; a beam focusing means 26 for focusing the laser beam 23; and a beam deflecting means 18 that effects a controlled deflection of the laser beam in two mutually perpendicular directions, said beam deflection means 18 being arranged intermediate the beam generating means 15 and the beam focusing means 26. The intended use limitations “onto said surface of said strip” and “wherein said laser unit is operable to provide laser engraved markings at exact locations on said surface when said strip

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intermittently is in an immobilized condition before being fed into a processing apparatus, which mechanically shapes the thus-marked strip into marked articles to be included in cans” do not structurally distinguish the laser unit of the claimed invention over the laser unit of Woelki.

In regards to claim 23, Figure 3 of Woelki discloses a laser unit further comprising a beam expansion means 16 that increases a diameter of the laser beam 23 emitted from the beam generating means 15, said beam expansion means being arranged intermediate the beam generating means 15 and the beam deflecting means 18.

In regards to claim 24, the intended limitation “wherein said laser unit is operable to provide about 1-5 μm deep engravings in said surface of said strip” does not structurally distinguish the laser unit of the claimed invention over the laser unit of Woelki.

In regards to claim 25, Woelki discloses the beam generating means 15 outputs laser radiation at a wavelength of 1047nm, which is in the near IR wavelength range (column 2, lines 26-30).

In regards to claim 26, Woelki discloses the beam generating outputs laser radiation in a sequence of pulses (column 2, lines 26-30).

In regards to claim 27, Figure 5 of Woelki discloses a laser unit further comprising a control unit 19 having a memory means 49 and a processor 47 that operates said laser unit (column 2, lines 35-44). The memory means is capable of storing any type of information, including patterns. The processor is capable of operating in a manner as instructed by the memory means.

In regards to claim 28, Woelki discloses the processor 47 is adapted to conjointly control the beam generating means 15 and the beam deflecting means 18 (column 3, lines 1-10). The

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processor is capable of controlling these components in manner that results in at least one pulse of laser radiation output by the beam generating means forming visible pits in a surface, with the number of pits in the surface reproducing a pattern.

In regards to claim 29, Woelki discloses the processor 47 controls a time period between subsequent pulses (column 3, lines 3-10). The processor 47 is capable of controlling the laser pulses in a manner that results in each pulse generating a pit.

In regards to claim 30, Woelki discloses the processor 47 is adapted to, based on information stored in the memory means, calculate the positions of all of the pits on a surface before operating the laser unit (column 3, lines 47-67).

In regards to claim 31, the memory means 49 of Woelki is capable of storing a pattern comprising a number of characters.

In regards to claim 32, the processor 47 of Woelki is capable of controlling the beam deflecting means 18 in a manner so that characters are provided sequentially one after another on a surface.

In regards to claim 33, Woelki discloses the beam generating means 15 comprises an Nd:YAG laser (column 2, lines 15-18).

In regards to claim 34, Woelki discloses the beam generating means comprises a diode laser pumped Nd:YAG laser (column 2, lines 15-30).

In regards to claims 39 and 40, Figure 3 of Woelki discloses the beam focusing means 26 comprises a flat-field lens having an effective focal length of about 150mm (column 2, lines 12-14).

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In regards to claim 42, as best the examiner can ascertain, Figure 3 Woelki discloses the laser unit is disconnectible. The intended use limitation “to allow for manufacture of articles without marking of the strip” does not structurally distinguish the laser unit of the claimed invention over the laser unit of Woelki.

In regards to claim 43, the intended use limitation “wherein said marked articles are opening tabs to be attached to ends for cans” does not structurally distinguish the laser unit of the claimed invention over the laser unit of Woelki.

In regards to claim 44, the intended use limitation “wherein said laser unit is operable to provide the laser engraved markings on said surface of said strip such that each of said marked tabs have said markings on a tab surface between an opening in said tab and bent edge portions of the tab” does not structurally distinguish the laser unit of the claimed invention over the laser unit of Woelki.

In regards to claim 46, Figure 3 of Woelki discloses a laser unit comprising: a beam generator 15 configured to generate a beam 23 of laser radiation; a beam focuser, associated with the beam generator, that focuses the beam 23; and a beam deflector 18, associated with the beam focuser, that effects a controlled deflection of the beam 23 in two mutually perpendicular directions, said beam deflector 18 being arranged intermediate the beam generator 15 and the beam focuser 26. The intended use limitations “onto said surface of said strip” and “wherein said laser unit is operable to provide laser engraved markings at exact locations on said surface when said strip intermittently is in an immobilized condition before being fed into a processing apparatus, which mechanically shapes the thus-marked strip into marked articles to be included

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in cans" do not structurally distinguish the laser unit of the claimed invention over the laser unit of Woelki.

In regards to claim 47, Figure 3 of Woelki discloses a laser unit further comprising a beam expander 16, associated with the beam generator 15, that increases a diameter of the laser beam 23 emitted from the beam generator 15, said beam expander 16 being arranged intermediate the beam generator 15 and the beam deflector 18.

In regards to claim 48, Figure 5 of Woelki discloses a laser unit further comprising a control unit 19 having a memory means 49 and a processor 47 that operates said laser unit (column 2, lines 35-44). The memory means is capable of storing any type of information, including patterns. The processor is capable of operating in a manner as instructed by the memory means.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 22 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller et al. (US Pat. 6,080,958, hereinafter Miller) in view of Ihara.

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In regards to claim 22, Figure 2A of Miller discloses a laser unit comprising: a beam generating means 212 for generating a beam 218 of laser radiation and a beam deflecting means 216 that effects a controlled deflection of the laser beam 218 in two mutually perpendicular directions. The intended use limitations “onto said surface of said strip” and “wherein said laser unit is operable to provide laser engraved markings at exact locations on said surface when said strip intermittently is in an immobilized condition before being fed into a processing apparatus, which mechanically shapes the thus-marked strip into marked articles to be included in cans” do not structurally distinguish the laser unit of the claimed invention over the laser unit of Miller. The difference between Miller and the claimed invention is a beam focusing means positioned after the beam deflecting means. Figure 2 of Ihara discloses a laser unit with a beam focusing means positioned between a target 7 and a beam deflector. In view of such teaching, it would have been obvious to the ordinary artisan at the time the invention was made to modify the invention of Miller by using the beam focusing means of Ihara. The ordinary artisan would have been motivated to modify Miller in the manner described above for the purpose of focusing the laser beam on a small point of the target.

In regards to claim 41, as best the examiner can ascertain the claimed invention, Figure 2A of Miller discloses the laser unit is arranged in the immediate vicinity of, but physically unconnected to a processing apparatus 248.

Claims 35-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Woelki in view of Dulaney et al. (US Pat. 6,373,876, hereinafter Dulaney).

In regards to claims 35 and 36, Figure 4 of Woelki discloses the beam generating means 15 comprises a laser cavity. The difference between Woelki and the claimed invention is a mode selection element arranged in the laser cavity for obtaining suitable laser mode characteristics. Figure 1 of Dulaney discloses a mode selection element 18 in a laser cavity. In view of such teaching, it would have been obvious to the ordinary artisan at the time the invention was made to modify the invention of Woelki by using a mode selection element. The ordinary artisan would have been motivated to modify Woelki in the manner described above for the purpose of increasing the lifetime of the associated optical components (column 3, lines 29-32).

In regards to claim 37, it is further obvious in the invention of Woelki and Dulaney to use the TEM₀₀ mode of Dulaney (column 1, lines 39-43) for the purpose of creating a beam with low divergence (column 2, lines 19-21).

Claim 38 rejected under 35 U.S.C. 103(a) as being unpatentable over Woelki in view of Dulaney as applied to claim 35 above, and further in view of Kunz et al. (US Pat. 4,675,500, hereinafter, Kunz).

A further difference between Woelki and the claimed invention is the mode selection element defines an aperture of variable diameter that is arranged to selectively transmit a portion of the laser beam. Figure 2a and 2b of Kunz disclose a mode selection element MB has a variable diameter. In view of such teaching, it would have been obvious to the ordinary artisan at the time the invention was made to further modify the invention of Woelki by using a mode selection element that has an aperture of variable diameter. The ordinary artisan would have

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been motivated to modify Woelki in the manner described above for the purpose of simplifying variation of the transverse mode distribution of the beam (column 1, lines 36-39).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew C. Landau whose telephone number is (703) 305-4396.

The examiner can normally be reached from 8:00 AM-4:30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lee can be reached on (703) 308-1690. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



EDDIE LEE
SUPERVISORY PATENT EXAMINER
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Matthew C. Landau

Examiner

November 8, 2002